INTRODUCTION TO COMPUTER SCIENCE II - CS 112

Project Wordle

The objective of the Wordle puzzle is for the player to figure out the “hidden word” using no more than six guesses.

The image at the bottom (from the New York Times) succinctly describes the rules. You will be programming the Wordle game for a human player to play on the computer. You will be writing a console-based game that requires some adaptations from the online game.

Rules of the game:

- Your program selects a random 5 letter word - mystery word - from a word bank (supplied to you)
- The user will have 6 attempts to guess the mystery word correctly. If the user does not guess the word in 6 attempts, the program should tell the user she lost and shall print the mystery word
- If the word guessed has a letter in the correct place in the mystery word, your program will print the letter in the right place
- If the word guessed has a letter that is present in the mystery word, but in the wrong place, your program will print the letter in the position guessed by the user, enclosed in **`[]`**
- If a letter in the word guessed does not have a match in the mystery word, then your program will print a ‘_’ in its place
- If the word guessed is the mystery word, congratulate the player!

The following examples illustrate this.

```
subbu-mbp WordleProject % java Wordle

Welcome to Wordle!
The mystery word is a 5-letter English
word.
You have 6 chances to guess it.

guess 1: arise
  _ _ _ _ [e]
guess 2: devil
  d e _ _ _
guess 3: delight
Your guess must be 5 letters long.
guess 3: derog
  d e _ _ _
guess 4: demur
  d e _ _ _
guess 5: depth
depth
Congrats! You guessed it!
```

```
subbu-mbp WordleProject % java Wordle

Welcome to Wordle!
The mystery word is a 5-letter English
word.
You have 6 chances to guess it.

guess 1: arise
  _ _ _ [s] _
guess 2: spree
  s _ _ _ _
guess 3: strut
  s _ _ [u] _
guess 4: super
  s [u] _ _ _
guess 5: slugs
  s _ u _ _
guess 6: study
Sorry! Better luck next time!
The word was snuck.
```

What will you be given:

You will be given a plain text file `words.txt`. This file contains thousands of words, not all of which are five characters long.

What you need to do:

You shall design a class WordList that opens this file, reads it, and saves only the 5-character words to an array. (You may want to read the file twice: once to count the number of 5-character words and once to store the words to an array.) Your WordList class shall have a method called `getRandomWord()` that selects one of the 5-character words at random and returns it. That word can be used by your Wordle class as the mystery word in the game.

You shall design, code, and test Wordle.java, the main driver file for the game:

1. Picks a random mystery word from WordList
2. Asks the user for guesses, one guess at a time
3. Verifies the guess against the mystery word to respond to the user with a string that follows the rules defined above (and illustrated via examples)
4. Follows the rules of the game to play the game with the user.

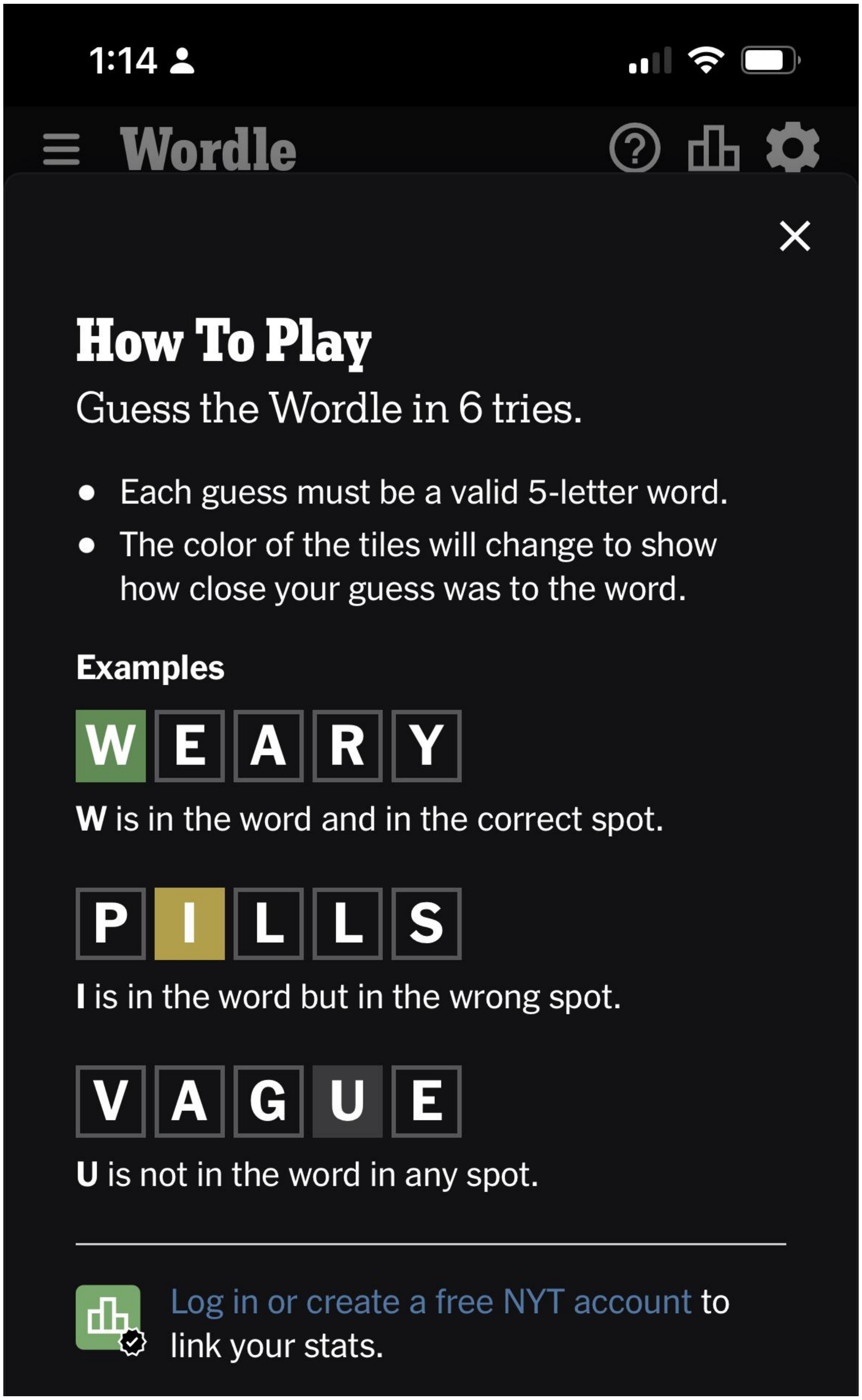
Some things to keep in mind:

1. Think about your class design
2. Write pseudo code
3. Imagine all the exception scenarios

4. Write test cases for scenarios in which the human player behaves well and in which they do not

Deliverables

Deliverable	**Points**	**Date**
Design document submitted (Word, PDF, etc). Includes: - class design: member variables, method "signatures" (names/return types/input arguments) - pseudo code for critical algorithms (e.g. how to handle a user's guessed word	35	Week #1: October 19
Version 1 of code is in correct location, pushed to GitHub, compiles.	5	Week #1
Version 1 of code handles cases where user follows all rules perfectly	10	Week #1
Version 2 of code handles "user follows rules" and "user does not follow rules" test cases, with useful message printouts and without crashes or exceptions	70	Week #2: October 26
Version 2 of code follows design guidance. WordList properly reads entire word list, properly returns random selection from the list	40	Week #2
Version 2 software quality: clear code, good comments, good design	40	Week #2
10-minute interview shows understanding of one's own software. Bring an informal one-page document describing how you tested your program	40	Week #2



How To Play

Guess the Wordle in 6 tries.

- Each guess must be a valid 5-letter word.
- The color of the tiles will change to show how close your guess was to the word.

Examples

W E A R Y

W is in the word and in the correct spot.

P I L L S

I is in the word but in the wrong spot.

V A G U E

U is not in the word in any spot.

Log in or create a free NYT account to link your stats.